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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/577,743

02/13/2007

Udo-Martin Gomez

10191/4184

2848

26646 7590 04/03/2009

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EXAMINER

CHAPMAN JR, JOHN E

ART UNIT

PAPER NUMBER

2856

MAIL DATE

DELIVERY MODE

04/03/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/577,743	Applicant(s) GOMEZ ET AL.	
	Examiner John E. Chapman	Art Unit 2856	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 11-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 April 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/27/06, 12/3/08</u> . | 6) <input type="checkbox"/> Other: ____. |

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DETAILED ACTION

1. The drawings are objected to because Fig. 1 should be designated by a legend such as -- Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). In addition, block elements 201, 202, 203, 207, 209 and 210 in Fig. 2 should be labeled using a suitable legend. Likewise, the block elements in Figs. 3, 4 and 5 should be labeled.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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3. Claims 11-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The embodiment of the yaw rate sensor in Fig. 2 is unclear. Comb drive (6) of the drive element and quadrature compensation structures (8, 9) of the Coriolis element appear to be located on the same element, rather than located on different elements (1a, 2a) connected by a U-shaped spring (4) as shown in Fig. 1. Consequently, it is not clear whether the drive element and Coriolis element comprise a single element or separate elements. Likewise it is not clear in the embodiments of the yaw rate sensor in Figs. 3, 4 and 5 whether the drive element and Coriolis element comprise a single element or separate elements.

Regarding claim 19, it is not clear what is meant by “electromechanical multiplication.” For example, it is not clear how to provide an electromechanical device (204) for multiplying the voltage signal (200a) and the voltage signal (203a).

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 11-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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Regarding claim 11, there is insufficient structure recited to support the desired result that the “Coriolis element is capable of being induced by the drive element to oscillate parallel to a first axis.” A spring (4) connecting the Coriolis element (2a) and drive element (1a) is essential to the drive element inducing the Coriolis element to oscillate parallel to a first axis (X). Hence, the claim is incomplete for omitting an essential element, such omission amounting to a gap between the elements. See MPEP § 2172.01. In addition, there is insufficient antecedent basis to support “a frequency of oscillation of the drive element parallel to the first axis” in lines 12-13. A means for driving the drive element parallel to the first axis at a frequency of oscillation should be recited in order to provide support for “a frequency of oscillation of the drive element parallel to the first axis.”

Regarding claim 15, there is insufficient structure recited to support the desired result that “the dynamic action has a fixed phase relationship to the oscillation of the drive element parallel to the first axis.” The structure which goes to make up the device must be clearly and positively specified. In particular, a means for providing a fixed phase relationship between the dynamic action and the oscillation of the drive element parallel to the first axis should be recited in the claim.

Regarding claim 16, a means for adjusting a phase of the dynamic action conveyed by the force-conveying arrangement in relation to the oscillation of the drive element parallel to the first axis should be recited in the claim.

Regarding claim 17, a means for detecting deflection of the Coriolis element in the second axis and for controlling an amplitude of the dynamic action should be recited in the claim.

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Regarding claim 18, springs connecting the Coriolis elements and drive element should be recited, as per claim 11 above. In addition, a means for driving the drive element parallel to the first axis at a frequency of oscillation should be recited in the claim.

Claim 19 is unclear. It is not clear what is meant by “electromechanical multiplication.” In addition, it is not clear whether the “signal having the frequency of the oscillation of the drive element” recited in lines 3-4 is the same as, or different from, the “signal having the frequency of the oscillation of the drive element with a phase shift to a multiplicand” recited in lines 4-5. It is not clear which embodiment(s) claim 19 reads upon. While a phase shifted signal (201a) is provided as a multiplicand to a multiplier (204) in Fig. 2, it is not at the frequency of the oscillation of the drive element. The signal (200a) provided as a multiplicand to a multiplier (204) in Fig. 3 is not phase shifted. Likewise in Figs. 4 and 5. An identification and explanation of which embodiment(s) claim 19 reads upon should be provided. Furthermore, insofar as a phase shift is provided to a signal having the frequency of the oscillation of the drive element, a means for shifting the phase of the signal should be recited in the claim.

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Clark et al. (6,067,858) discloses a yaw rate sensor in Fig. 14 comprising a drive element (230), a Coriolis element (220), and a force-conveying arrangement (270) for reducing the quadrature error. Nagao (6,267,008) discloses a yaw rate sensor in Fig. 4 comprising drive elements (30-1, 30-2) and a Coriolis element (20), wherein correction electrode portions (54-1 through 54-4) counterbalance the effects of diagonal oscillation of the drive elements. Nagao further discloses electrode portions (55-1 through 55-4) in Fig. 7 for adjusting the displacement

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amount of the Coriolis element (20). Ito et al. (7,216,538) discloses a yaw rate sensor in Fig. 3 comprising a drive element (40) and a Coriolis element (30), wherein the output of the vibrator may contain second and third harmonics of the frequency of oscillation of the drive element (column 4, lines 5-8).

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John E. Chapman whose telephone number is (571) 272-2191. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/John E Chapman/
Primary Examiner, Art Unit 2856